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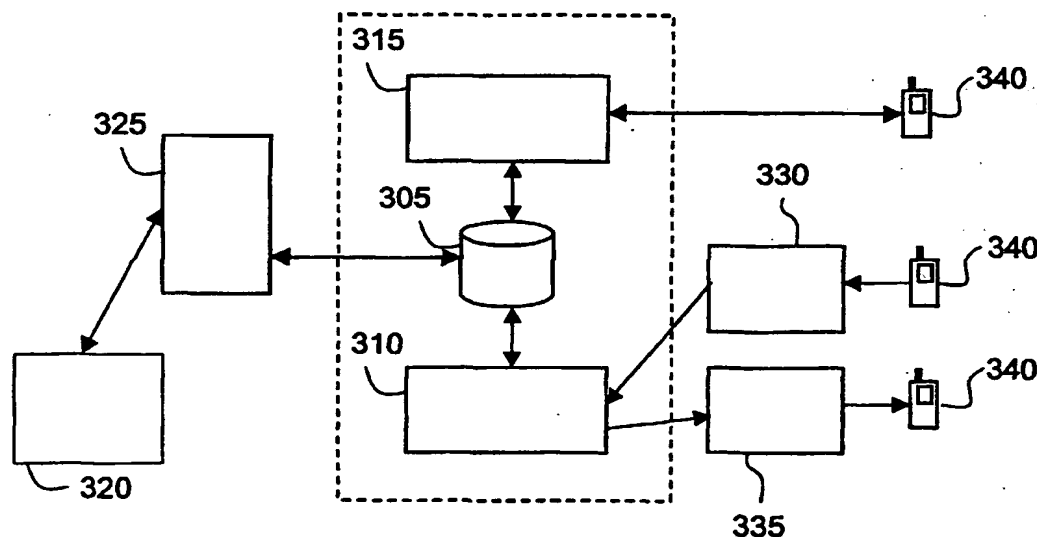
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(54) Title: METHOD AND SYSTEM FOR ASSISTING MOBILE TELECOMMUNICATION TERMINAL USERS

(57) Abstract: A method, and a corresponding system, for assisting mobile telecommunication terminal users to establish contact are disclosed. According to the method profiles of mobile telecommunication terminal users are stored and the mobile telecommunication terminal users are linked to particular mobile telecommunication terminals. Furthermore, relative distances between the mobile telecommunication terminals are determined and different mobile telecommunication terminal users are matched with each other based on the profiles of the mobile telecommunication terminal users and the relative distances between the mobile telecommunication terminals to which the mobile telecommunication terminal users are linked. Finally, the mobile telecommunication terminal users for which a match has been made are alerted of the match.

WO 01/26408 A1

METHOD AND SYSTEM FOR ASSISTING MOBILE TELECOMMUNICATION TERMINAL USERS

Field of the invention

The present invention generally relates to telecommunications, and specifically to a method, and a corresponding system, for assisting mobile
5   telecommunication terminal users to establish contact.

Background of the invention

In mobile telecommunications there are means for different mobile telecommunication terminal users to communicate with each other. In order to communicate with
10   another mobile telecommunication terminal user, a mobile telecommunication terminal user needs to establish a mobile telecommunication channel over which the communication can be performed. In known systems for
15   mobile telecommunication, such as GSM, TDMA, CDMA, etc. these telecommunication channels are initiated by one mobile telecommunication terminal user by dialling the mobile telephone number of another mobile telecommunication terminal user. Thus, for a mobile
20   telecommunication terminal user to be able to communicate with another mobile telecommunication terminal user he or she needs to know the mobile telephone number of the other mobile telecommunication terminal user. This is a problem when a mobile telecommunication terminal user
25   wants to get in contact with someone that he or she does not know the mobile phone number of. This situation may arise in several different situations, such as when a mobile telecommunication terminal user wants to get in contact with someone who is located within some distance
30   from him or her and who has some particular physical attributes, personality traits, interests etc. and whose telephone number he or she does not know. Examples of personality traits could be a skill that mobile

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telecommunication terminal user is in need of, such a doctor, mechanic etc.

Summary of the Invention

5   An objective of the present invention is to alleviate the above-mentioned problem of known mobile telecommunication systems, where a mobile telecommunication terminal user is not able to establish telecommunication channels from his or her mobile telecommunication terminal to another user's mobile telecommunication terminal unless he or she knows the mobile telephone number of the other user's mobile telecommunication terminal.

     The invention is based on the recognition that sometimes a first mobile telecommunication terminal user does not want to get in contact with specific second mobile telecommunication terminal user, but with a second mobile telecommunication terminal user that has a specific profile and that is located within a specific distance from the first mobile telecommunication terminal user. This is done by combining elements in known mobile communication systems inventively in combination with a matching system that is operatively connected to these known elements.

     According to one aspect of the invention a method for assisting mobile telecommunication terminal users to establish contact is provided. According to the method profiles of mobile telecommunication terminal users are stored in a database and the mobile telecommunication terminal users are linked to particular mobile telecommunication terminals. Furthermore the relative distances between the mobile telecommunication terminals are determined and different mobile telecommunication terminal users are matched with each other, based on the profiles of the mobile telecommunication terminal users and the relative distances between the mobile telecommunication terminals to which the mobile

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telecommunication terminal users are linked. If a match
is made the matching mobile telecommunication terminal
users are alerted.

Thus, according to the method a mobile
5   telecommunication terminal user is alerted when someone
who has some particular physical attributes, personality
traits, interests etc that he or she is looking for is
located within a certain distance from him or her. If,
for example, a mobile telecommunication terminal user is
10 in need of someone with special personality traits, such
as a mechanic, he or she will be alerted if there is a
mechanic within a certain distance. Furthermore, since
each mobile telecommunication terminal user is linked to
a mobile telecommunication terminal there is enough
15 information to establish a connection between matching
mobile telecommunication users.

According to one embodiment of a method according to
the invention a request for further information about a
mobile telecommunication terminal user with a matching
20 profile from an alerted mobile telecommunication terminal
user is received. After receiving this request,
instructions of how to proceed are sent to the alerted
mobile telecommunication terminal user.

According to another embodiment of a method
25 according to the invention the establishment of a
connection between a pair of mobile telecommunication
terminal users with matching profiles is enabled. This is
done by sending the mobile telecommunication terminal
number of one mobile telecommunication terminal users of
30 the pair of mobile telecommunication terminal users to
the other mobile telecommunication terminal user of said
pair of mobile telecommunication terminal users. An
advantage of this embodiment is thus that a mobile
telecommunication terminal user does not have to know the
35 mobile telephone number, or any other identification
information, in advance of the mobile telecommunication
terminal users that have the profile he or she is looking

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for in order to get in contact with these mobile
telecommunication terminal users.

According to another aspect of the invention a
system for assisting mobile telecommunication terminal
5   users to establish contact is provided. The Mobile Match
system keeps track of profiles and their relative
geographical positions, and alerts profile owners when
two or more owners of matching profiles are within a
given distance. A profile is defined as an information
10   data set belonging to an individual or object. The
profile could consist of data related to physical
attributes, personality traits, interests, or current
situation. Each profile is linked to a mobile device with
a unique identification number such as a mobile phone
15   number. Mobile Match uses relative geographical
positioning between two or more devices, as opposed to
absolute positioning where the true longitude and
latitude of a device is identified. Alerted profile
owners are given the option to contact or receive further
20   information about matching profiles. A profile owner can
choose to reveal its true identity or to stay anonymous.

By using relative distances, systematic errors of
absolute positions will not affect the performance of the
system and the method according to the invention. If, for
25   example, the mobile telecommunication terminals of two
mobile telecommunication terminal users are connected to
the same mobile base station and data regarding the
absolute position of this mobile station is erroneous,
this will not affect the determined relative distance
30   between the two mobile telecommunication terminal users.
This is due to the fact that the error will be equal for
both of the mobile telecommunication terminal users.

Brief Description of the Drawings
35   The invention will now be further elucidated by way
of exemplary embodiments described hereinafter with
reference to the accompanying drawings, in which:

figure 1 is an elevational view of exemplary
positions of mobile telecommunication terminal users
whose profiles are stored in a system according to the
invention;

     5   figure 2 is a flowchart of an embodiment of the
method according to the invention; and

figure 3 is a schematic diagram of an embodiment of
a system according to the invention.

Detailed Description of Preferred Embodiments

    10   In figure 1, an elevational view of exemplary
positions of mobile telecommunication terminal users A-I
whose profiles are stored in a system according to the
invention, is shown. Furthermore, the positions of the

    15   users are indicated in relation to a map of the
surroundings of the users, in this case an urban area
with streets indicated by the grid mesh 110. The user A
wants to get in contact with other users whose profiles
matches his or her profile. Furthermore, the user A only

    20   wants to get in contact with those users who are within a
certain distance from him or her, indicated by the circle
around the user A.

In figure 2, a flowchart of an embodiment of the
method according to the invention is shown. In step 210

    25   profiles of mobile telecommunication terminal users are
stored in a profile database. The profile may include
information regarding physical attributes, personality
traits, interests or current situation etc. The
personality traits could for example be some skills that

    30   mobile telecommunication terminal user is in need of,
such a doctor, mechanic etc. In step 215 the mobile
telecommunication terminal users are linked to particular
mobile telecommunication terminals. Then, the relative
distances between the telecommunication terminals are

    35   determined in step 220. This is done by sending a request
for position data of the mobile telecommunication
terminals to a mobile positioning centre (MPC). The

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position data are then received and the relative
distances between the mobile terminals are determined
from this position data. The telecommunication terminal
users are then matched with each other, based on their
5   profiles and relative distances. Let us say that the
mobile telecommunication terminal user A in figure 1 has
a profile that indicates that he or she is in need of a
mechanic that is located within the distance indicated by
the circle around the user A and that the profiles of the
10   mobile telecommunication terminal users D, F and K
indicate that they are car mechanics. In this case there
would be a match between the mobile telecommunication
terminal user A and the mobile telecommunication terminal
user D since the mobile communication terminal users F
15   and K are not located within the circle. Note that the
determination of the relative distances may be done after
profiles have been matched as well. In this case mobile
communication terminal users whose profiles match are
found first and then the relative distance between these
20   profile is determined in order to determine whether the
mobile telecommunication terminals are within the
distance that is the second requirement of a match. When
a match has been made the matching mobile
telecommunication terminal users are alerted of this
25   match in step 230. Finally, in step 235, the
establishment of a connection between matching
telecommunication terminal users is enabled. An mobile
telecommunication terminal users that has been alerted of
a match may then contact a interactive voice response
30   system in order to get more information of the matching
profiles and/or receive instruction of how to proceed.
The alerted mobile telecommunication terminal users may
then reveal his or her true identity, e.g. by revealing
his or mobile telephone number to a matching
35   telecommunication terminal user. Furthermore, if one of
the matching telecommunication terminal user has already
reveal his or her mobile telephone number the alerted

mobile telecommunication terminal user can establish a
connection to this matching telecommunication terminal
user by dialling his or her mobile telephone number.

   In figure 3, a schematic diagram of an embodiment of
a system according to the invention, is shown. The core
system components are a profile database 305, a
Matchmaker application 310, and an interactive voice
response centre 315 (IVRC). The profile database 305
contains information about profile owners and their
corresponding data sets. The Matchmaker 310 tracks the
relative position of active profiles and alerts profile
owners when a match is made. The IVRC 315 receives
incoming calls from alerted profile owners that wish to
get further information about matching profiles and
instructions on how to proceed. Supporting system
components are a web-based user interface 320 (browser),
a publishing server 325 (e.g. web and wap), a mobile
positioning centre 330 (MPC), mobile messaging centre 335
(SMSC), and mobile phones 340 or other mobile
communication devices. The web-based user interface 320
is an interactive user interface used to enter and manage
profiles. The publishing server 325 is used to publish
profiles and tracking status. The MPC 330 receives
instructions from the Matchmaker 310 on which mobile
phone numbers that should be positioned and returns the
positioning data to the Matchmaker 310. The mobile phone
messaging centre 335 connects the Matchmaker with mobile
phones 340. Alerts are generated by the Matchmaker 310
and are sent out by the SMSC 335. The mobile phone
system, or the mobile phone handset itself, generates the
positioning data. Mobile phones 340 also used to alert
profile owners and for profile owners to contact the IVRC
315

   The profile database 305 includes the profiles of
profile owners, i.e. mobile telecommunication terminal
users. Each mobile telecommunication terminal user is
logically linked to his or her mobile telecommunication

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terminal, such as a mobile telephone. The mobile
telecommunication terminal is identified by an unique ID,
such as its mobile telephone number. The matchmaker
application 310 includes relative distance determining

5   means for sending a request to the MPC 330 for position
data of a number of mobile telecommunication terminals,
means for receiving said position data from the MPC 330 ,
and relative distance determining means for determining
the relative distance between the number of mobile

10   telecommunication terminals from said position data. The
matchmaker application 310 also includes means for
matching different mobile telecommunication terminal
users with each other. The matching is based on the
profiles of the mobile telecommunication terminal users

15   and the relative distance between the mobile
telecommunication terminals to which said mobile
telecommunication terminal users are linked. Furthermore
the matchmaker application 310 generates an alert if
there is a match and the alert is sent via the SMSC 335

20   to the matching mobile telecommunication terminal users.
The IVRC 315 is arranged to receive a request for further
information about a mobile telecommunication terminal
user with a matching profile from an alerted mobile
telecommunication terminal user, and to send instructions

25   to the alerted mobile telecommunication terminal user of
how to proceed.

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CLAIMS

1. A method characterised by the following combination:

relative geographical positioning using mobile phone networks or mobile handsets;

linking of an information data set (profile) to a particular mobile device using the unique identification of the mobile device, such as a mobile phone number;

linking of an information data set to a profile owner, such as a physical object or person;

identification of matching profiles using information data sets and information about profile owners' relative geographical positions; and

notification of a match to a profile owner using mobile phones or other mobile communication devices.

2. A system characterised by the following combination:

means for relative geographical positioning using mobile phone networks or mobile handsets;

means for linking of an information data set (profile) to a particular mobile device using the unique identification of the mobile device, such as a mobile phone number;

means for linking of an information data set to a profile owner, such as a physical object or person;

means for identification of matching profiles using information data sets and information about profile owners' relative geographical positions; and

means for notification of a match to a profile owner using mobile phones or other mobile communication devices.

3. A system for assisting mobile telecommunication terminal users to establish contact, comprising:

storage means for storing profiles of mobile
telecommunication terminal users;

means for linking mobile telecommunication terminals
to particular mobile telecommunication terminal users;

5   relative distance determining means for determining
relative distances between mobile telecommunication
terminals;

means for matching different mobile
telecommunication terminal users with each other based on

10   the profiles of said mobile telecommunication terminal
users and the relative distances between the mobile
telecommunication terminals to which said mobile
telecommunication terminal users are linked; and

means for alerting the mobile telecommunication

15   terminal users for which a match has been made.

4. The system according to claim 3, further
comprising:

means for sending a request to a mobile positioning

20   centre for position data of a number of mobile
telecommunication terminals; and

means for receiving, from said mobile positioning
centre, said position data of said number of mobile
telecommunication terminals, and

25   wherein said relative distance determining means are
arranged to determine relative distance between said
number of mobile telecommunication terminals from said
position data.

30   5. The system according to claim 3, further
comprising:

means for receiving position data from a number of
mobile telecommunication terminals, and

wherein said relative distance determining means are

35   arranged to determine the relative distance between said
number of mobile telecommunication terminals from said
position data.

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6. The system according to any one of claim 3-5,
wherein said matching means are arranged to identify
pairs of mobile telecommunication terminal users for
5   which the profile of one of each pair of mobile
telecommunication terminal users is a profile that the
other of the pair of mobile telecommunication terminal
users is looking for, and to determine for each of said
pairs of mobile telecommunication terminal users, if the
10   relative distance between the pair of mobile terminals
that are linked to the pair of mobile telecommunication
terminal users is less than a predetermined distance,
that there is a match.

15   7. The system according to any one of claim 3-6,
further comprising:
        means for receiving a request for further
information about a mobile telecommunication terminal
user with a matching profile from an alerted mobile
20   telecommunication terminal user; and
        means for sending instructions to said alerted
mobile telecommunication terminal user of how to proceed.

        8. The system according to any one of claim 7,
25   wherein said means for sending instructions are arranged
to send the mobile telecommunication terminal number of
one mobile telecommunication terminal users of said pair
of mobile telecommunication terminal users to the other
mobile telecommunication terminal user of said pair of
30   mobile telecommunication terminal users.

        9. A method for assisting mobile telecommunication
terminal users to establish contact, comprising the steps
of:
35   storing profiles of mobile telecommunication
terminal users;

linking said mobile telecommunication terminal users
to particular mobile telecommunication terminals;
determining relative distances between said mobile
telecommunication terminals;
5   matching different mobile telecommunication terminal
users with each other based on the profiles of said
mobile telecommunication terminal users and the relative
distances between the mobile telecommunication terminals
to which said mobile telecommunication terminal users are
10   linked; and
alerting the mobile telecommunication terminal users
for which a match has been made.

10. The method according to claim 9, wherein the
15   step of determining comprises the steps of:
sending a request to a mobile positioning centre for
position data of a number of mobile telecommunication
terminals;
receiving, from said mobile positioning centre, said
20   position data of said number of mobile telecommunication
terminals; and
determining the relative distance between said
number of mobile telecommunication terminals from said
position data.
25

11. The method according to claim 9, wherein the
step of determining comprises the steps of:
receiving position data from a number of mobile
telecommunication terminals; and
30   determining the relative distance between said
number of mobile telecommunication terminals from said
position data.

12. The method according to any one of claim 9-11,
35   wherein the step of matching comprises the steps of:
identifying pairs of mobile telecommunication
terminal users for which the profile of one of each pair

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of mobile telecommunication terminal users is a profile
that the other of the pair of mobile telecommunication
terminal users is looking for; and

determining for each of said pairs of mobile
telecommunication terminal users, if the relative
distance between the pair of mobile terminals that are
linked to the pair of mobile telecommunication terminal
users is less than a predetermined distance, that there
is a match.

13. The method according to any one of claim 9-12,
further comprising the steps of:

receiving a request for further information about a
mobile telecommunication terminal user with a matching
profile from an alerted mobile telecommunication terminal
user; and

sending instructions to said alerted mobile
telecommunication terminal user of how to proceed.

14. The method according to any one of claim 9-13,
further comprising the step of:

enabling the establishment of a connection between a
pair of mobile telecommunication terminal users with
matching profiles by sending the mobile telecommunication
terminal number of one mobile telecommunication terminal
users of said pair of mobile telecommunication terminal
users to the other mobile telecommunication terminal user
of said pair of mobile telecommunication terminal users.

15. A computer program comprising computer-
executable instructions for performing the steps recited
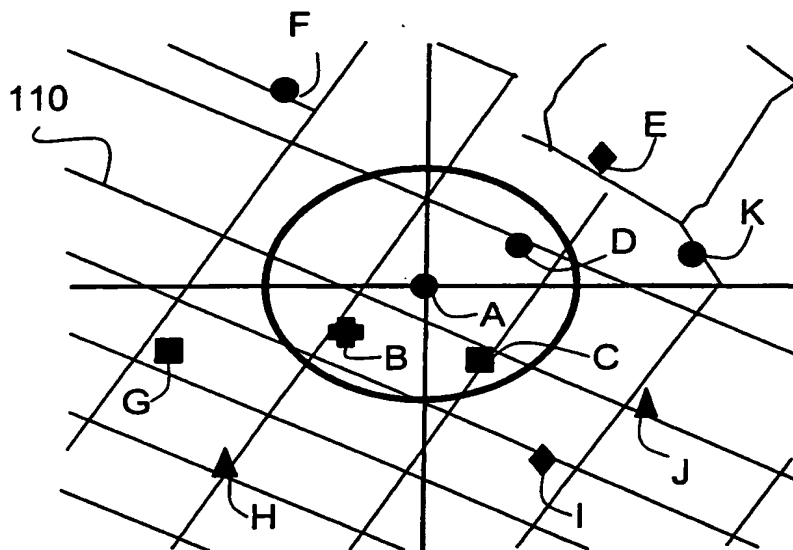in any of the claims 9-14.

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Figure 1

Figure 3

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210   STORE PROFILES OF MOBILE TELECOMMUNICATION TERMINAL USERS

215   LINK MOBILE TELECOMMUNICATION TERMINAL USERS TO MOBILE COMMUNICATION TERMINALS

220   DETERMINE RELATIVE DISTANCE BETWEEN MOBILE COMMUNICATION TERMINALS

225   MATCH MOBILE TELECOMMUNICATION TERMINAL USERS BASED ON PROFILES AND RELATIVE DISTANCE

230   ALERT MATCHING MOBILE TELECOMMUNICATION TERMINAL USERS

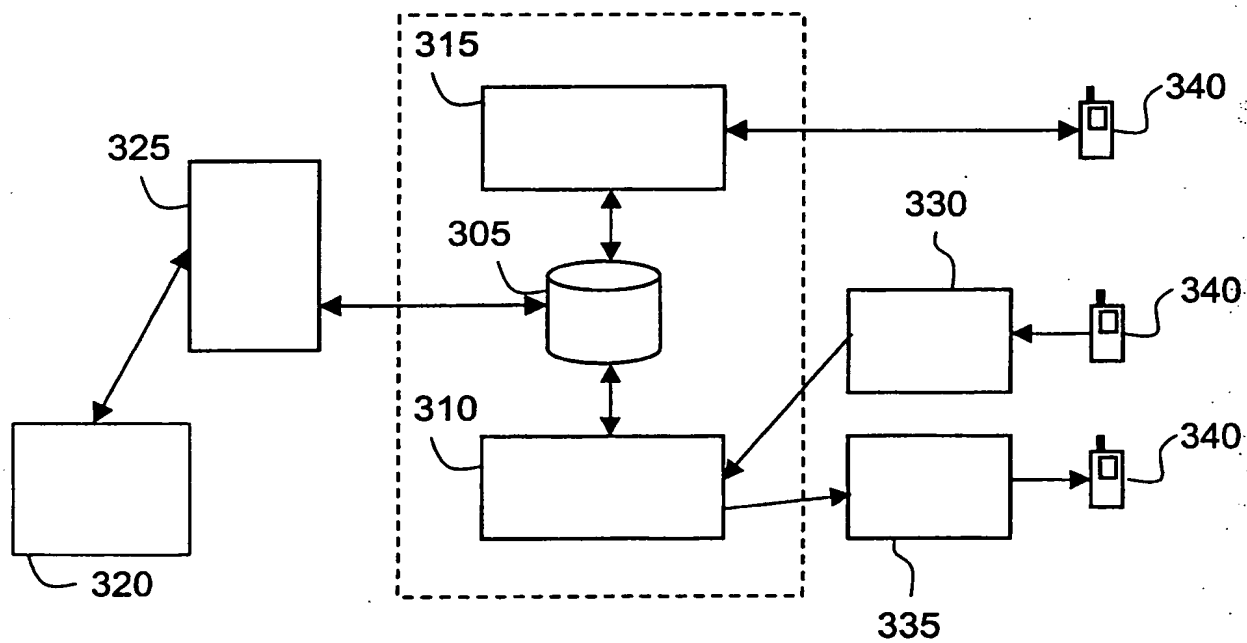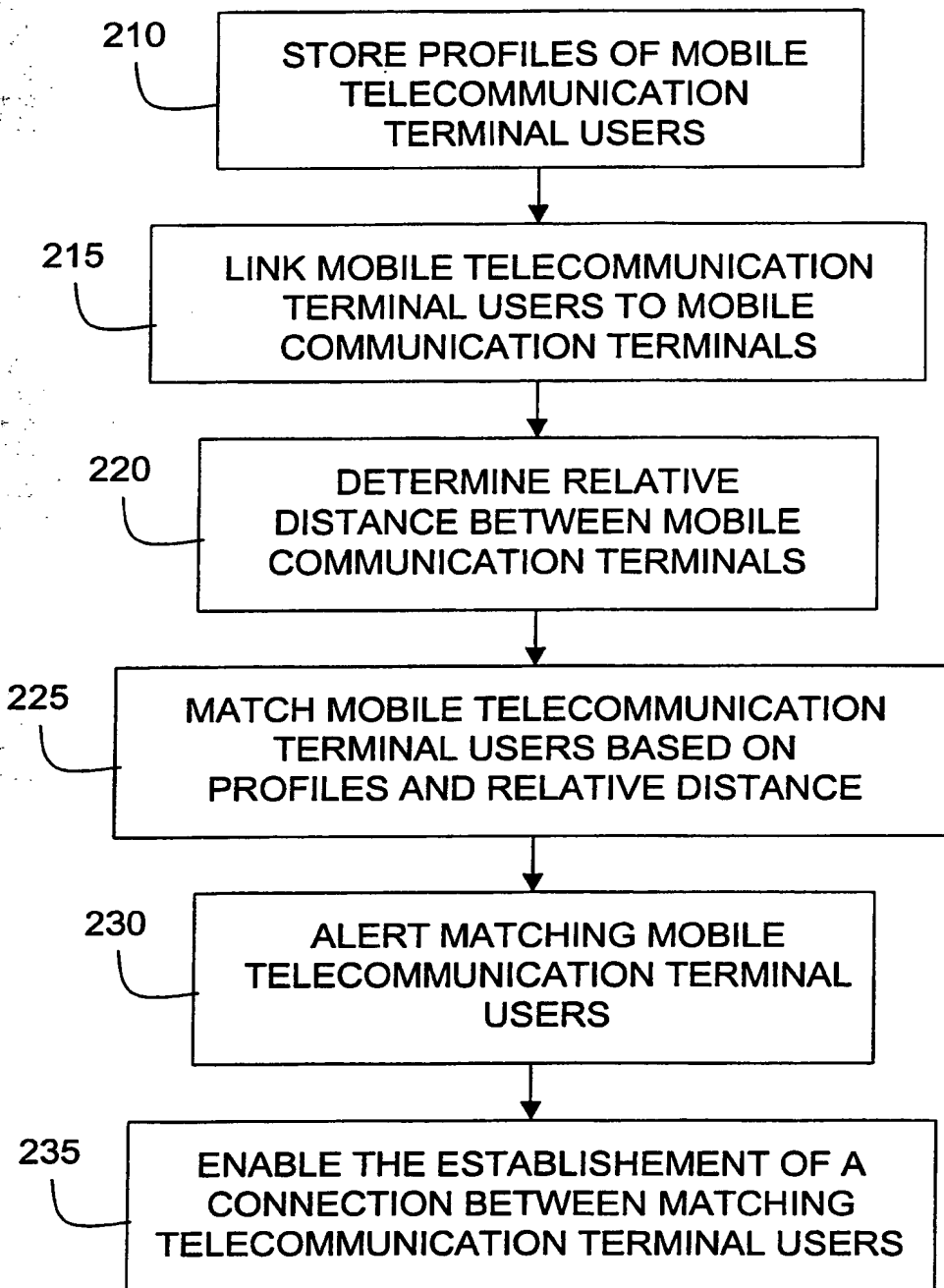235   ENABLE THE ESTABLISHEMENT OF A CONNECTION BETWEEN MATCHING TELECOMMUNICATION TERMINAL USERS

Figure 2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/01386

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04Q 7/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 5898680 A (JOHNSTONE, ET AL), 27 April 1999 (27.04.99), abstract --	1-15
A	US 5583917 A (JONSSON), 10 December 1996 (10.12.96), abstract -- --------	1-15

☐ Further documents are listed in the continuation of Box C.   ☒ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
12 January 2001	1 7 -01- 2001

Name and mailing address of the ISA/	Authorized officer
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Form PCT/ISA/210 (second sheet) (July 1998)

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